

In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) An apparatus for recognizing animal species from an animal voice, comprising:

a voice signal collection device for receiving the animal voice and outputting a voice signal ;

a feature extraction module for extracting a target parameter vector from the voice signal, the target parameter vector being Mel-Scale Cepstrum parameter vector obtained by a triangular bandpass filter;

at least one storage device for storing a plurality of sample parameter vectors extracted from a plurality of known animal voices, and species data corresponding to the sample parameter vectors, the sample parameter vectors being Mel-Scale Cepstrum parameter vectors obtained by the triangular bandpass filter;

a comparison module for comparing the target parameter vector with the sample parameter vectors to find a matching sample parameter vector similar to the target parameter vector using DTW (Dynamic Time Warping) or HMM (Hidden Markov Model) method; and

at least one output device for displaying the species data corresponding to the matching sample parameter vector.

2. (Original) The apparatus as claimed in claim 1, wherein a plurality of sample parameter vectors correspond to one of the species data.

3. (Original) The apparatus as claimed in claim 1, wherein the feature extraction module extracts the target parameter vector according to the rhythm, tune or timbre of the voice signal.

4. (Original) The apparatus as claimed in claim 1, wherein the target parameter vector and the matching sample parameter vector have a minimum distance therebetween.

5. (Currently Amended) A method for recognizing animal species from an animal voice, the method comprising:

converting an animal voice into a target signal;

extracting a target parameter vector being Mel-Scale Cepstrum parameter vectors obtained by a triangular bandpass filter from the target signal;

comparing the target parameter vector with a plurality of sample parameter vectors stored in a parameter database to obtain a matching sample parameter vector which is similar to the target parameter vector using DTW (Dynamic Time Warping) or HMM (Hidden Markov Model) method, the sample parameter vectors being Mel-Scale Cepstrum parameter vectors obtained by the triangular bandpass filter; and

outputting species data corresponding to the matching sample parameter vector stored in the parameter database if the matching sample parameter vector is found.

6. (Original) The method as claimed in claim 5, wherein the parameter database is established by the steps comprising:

converting a known animal voice into a sample signal;

extracting a sample parameter from the sample signal;

storing the sample parameter vector into the parameter database; and

storing species data corresponding to the sample parameter vector into the parameter database.

7. (Original) The method as claimed in claim 5 and 6, wherein the steps of extracting the target parameter vector and the sample parameter vectors are according to the rhythm, tune or timbre of the target signal and the sample signal respectively.

8. (Original) The method as claimed in claim 5, wherein a plurality of sample parameter vectors correspond to one of the species data.

9. (Original) The method as claimed in claim 5, wherein the matching sample parameter vector and the target parameter have a minimum distance therebetween.